



Chapter 1

Introduction and Background

DeSoto National Wildlife Refuge lies astride the border of two Midwestern “breadbasket” states – Iowa and Nebraska. DeSoto also straddles the Missouri River. Records of explorers, early trappers and the Lewis and Clark Expedition all indicate a great abundance and variety of fish and wildlife in the Missouri River Basin. Once known as “the Big Muddy,” nowadays the Missouri is much less muddy and much more predictable. It has been regulated – but not entirely tamed (as recent floods have shown) – by a half-century of developing dams, reservoirs, jetties, levees, and other structures intended to control floods and provide for navigation, irrigation, hydro-electricity, and recreation. While substantial benefits have been reaped, these civil works have severely impacted the Missouri’s natural habitats, flora, and fauna, including those of the DeSoto Refuge.

Today, the Missouri River ecosystem is a highly modified environment. Much of it is now slack water sitting behind reservoirs and most of the open stream channelized. Its banks are now heavily industrialized in places, and intensive agriculture flourishes on its floodplain. DeSoto National Wildlife Refuge exists as a remnant, a near-representation of what natural habitats once were in the pre-development era, but can never again become; it is one of the “pearls” of ecologically important areas on the reach of the Missouri below Sioux City. Its oxbow lake, riparian forests, native grasslands, wetlands, and specially-managed croplands provide a diversity of habitats attractive to many species of wildlife, most notably migratory waterfowl and other birds. DeSoto is internationally renowned for its spectacular fall migration of hundreds of thousands of snow geese – and for this reason perhaps has a special role to play in the management of this beautiful but now overabundant species.

DeSoto Refuge is unique in that it is the site of the “recovered” sunken steamboat *Bertrand*. This cargo-carrying riverboat hit a partially submerged snag on the old DeSoto Bend in April, 1865. Displays of its recovered and restored cargo are a major refuge attraction. These artifacts, buried for over a century and unearthed from their muddy sarcophagus in 1968, are like a time capsule. Observing, studying, interpreting and displaying them offers insights into the past – into the bygone era of exploration and settlement of the American West.

This plan describes how DeSoto Refuge will provide for migratory and endangered species within its boundaries, work with partners to improve habitats beyond its boundaries, expand opportunities for wildlife viewing and fishing, further develop environmental education, interpretation of natural and cultural history, and provide outreach programs to increase appreciation of fish, wildlife and the environmental influence of Western settlement.



Introduction

DeSoto National Wildlife Refuge (NWR) inherits its historic name from the major bend at this point of the Missouri River. The bend was named after the nearby river town of DeSoto, once the county seat of Washington County, Nebraska, as well as a ferry crossing. DeSoto prospered in the 1850's and 1860's, before being abandoned in the late 19th century when the main Missouri River channel shifted and left the townsite "high and dry" several miles from the river. The refuge is located about 25 miles north of Omaha, Nebraska, in Harrison and Pottawattamie Counties, Iowa, and Washington County, Nebraska. It lies about midway between the towns of Missouri Valley, Iowa, and Blair, Nebraska. See Figure 1. DeSoto NWR is 7,823 acres in size, 3,499 of which are in Iowa and 4,324 in Nebraska.

DeSoto NWR was established on March 12, 1958. It was authorized by the Migratory Bird Conservation Act of 1929 (16 U.S.C. § 715d) for "*...use as an inviolate sanctuary or for other management purposes, for migratory birds.*" Later, the Refuge Recreation Act of 1962 (16 U.S.C. § 460k-1) identified additional purposes for which the refuge was suitable: "*...(1) incidental fish and wildlife-oriented recreational development, (2) the protection of natural resources, (3) the conservation of endangered species or threatened species...*"

The Fish and Wildlife Act of 1956, as amended [16 USC ss 742f (a) (4) (5)], is the specific law granting authority for acquiring lands for national wildlife refuges. Under this Act, the Secretary of the Interior is authorized to take steps as may be required for the development, advancement, management, conservation, and protection of fish and wildlife resources, including but not limited to research, development of existing facilities, and acquisition by purchase or exchange of land and water or interests therein. The Act also authorizes the Fish and Wildlife Service to accept gifts of real or personal property for its benefit and use in performing its activities and services. Land acquisition for DeSoto Refuge began in 1958. By the end of 1959 about 6,000 acres had been acquired, a majority of the present acreage.

DeSoto's mission statement elaborates on the refuge's purposes: "*To preserve and restore indigenous biological communities, with emphasis on wetland and riverine flora and fauna, and to provide both cultural and natural history interpretations for environmental education; and wildlife-dependent recreation, where and when such uses are compatible with the primary purposes of the refuge.*"

While the central focus of this Comprehensive Conservation Plan (CCP) is DeSoto National Wildlife Refuge, it also encompasses the DeSoto Fish and Wildlife Management District, which allows private landowners to enroll their lands in specific habitat improvement programs. At present, the District conducts management activities in 18 Iowa counties, as well as similar stewardship activities in eastern Nebraska. The primary emphasis of this CCP is on the Missouri River bottomlands at DeSoto Refuge, focusing on maintenance and enhancement of the Missouri River ecosystem for current and future generations of the American public.



DeSoto National Wildlife Refuge Vicinity Map

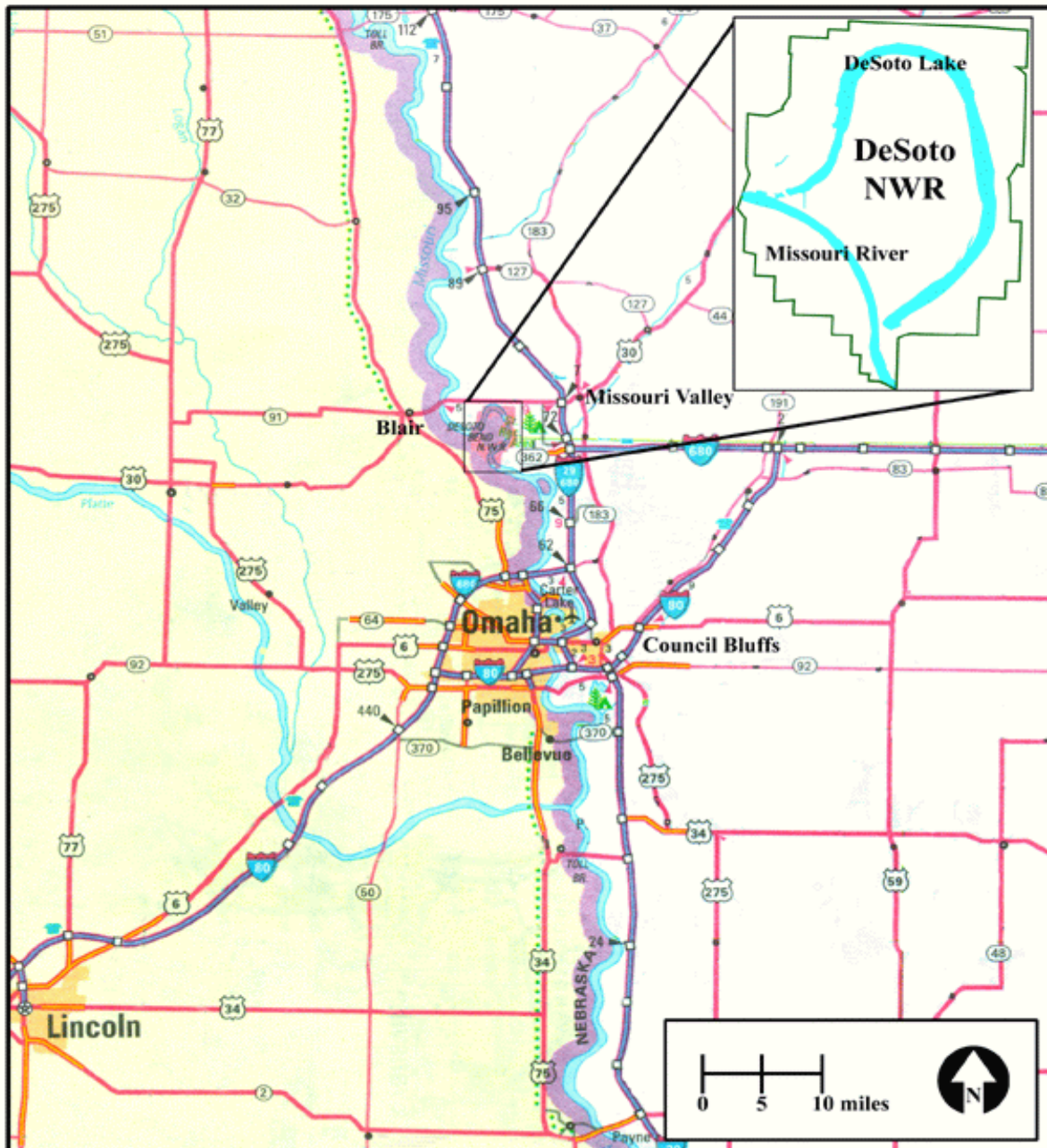


Figure 1



Due to the proximity of Boyer Chute NWR several miles downstream and across the Missouri, DeSoto staff has also been managing this refuge since its establishment, under an agreement with a different administrative region (Region 6). A separate CCP will be prepared for Boyer Chute in the future as development, management activities, and further land acquisition proceed at this newer unit.

DeSoto Refuge came into being at a time when refuge managers put much emphasis on providing “hot” foods, like corn, for migrating waterfowl. Farming techniques and willing local cooperators were an easy and economical way to provide such foods. In the early 1960's, woodlands were actually cleared to make way for additional cropland at DeSoto. Now refuge managers rely more on natural habitat quality and diversity and less on cultivated crops. This CCP recommends that approximately 1,500 acres of cropland on DeSoto NWR be reverted to about 1,140 acres of native grasslands, 355 acres of cottonwood forest, and 14 acres of moist soil management units and other wetland types.

DeSoto NWR manages a variety of habitats that provide resting, foraging, and nesting opportunities for nearly 250 species of resident and migratory birds. The major habitat types include woodlands (3,345 acres), freshwater aquatic (900 acres), croplands (1,990 acres), and native grasslands (1,640 acres). DeSoto Lake is a seven-mile long oxbow lake, which contributes 788 acres of aquatic area to the refuge's rich habitat mix. This diversity of habitats supports an abundance of resident plant, mammal, bird, reptile, amphibian, and fish species.

Management techniques now used on the refuge include control of DeSoto Lake water levels, wetlands and moist soil units; biological, chemical and mechanical control of invasive plant species; mowing, haying and prescribed burning of grasslands; biological rotations on cropland; food plots; some tree planting, grass seeding, and hunting of white-tailed deer and waterfowl.

In 1994, a team from the U.S. Fish and Wildlife Service considered alternative ways to better protect and restore the living resources of DeSoto NWR. One of the primary recommendations of this evaluation was that DeSoto's efforts should move in the direction of “ecosystem management.” This entails viewing the refuge in the context of regional conservation priorities, with a central goal of maintaining and reconstructing the best possible approximation of native communities by restoring natural ecological processes, structure, and composition. More specifically, refuge managers have embarked on a shift away from croplands to native grasslands and woodlands, more emphasis on non-game migratory birds like the neotropical migrants, and consideration of the hydrologic relationship of DeSoto Lake to the Missouri River.

DeSoto NWR's staffing includes 21 full- and part-time positions divided into six functions: biological program, public use, law enforcement, museum program, maintenance and administrative.



The Refuge Vision

The Refuge Vision describes an ideal future set of conditions that are expected to be the result of the stated management goals, objectives, and strategies:

DeSoto National Wildlife Refuge represents both cultural and natural resources of the past and present. This refuge attracts high use by both people and wildlife. Because of the recovery of the artifacts from the Steamboat Bertrand, the DeSoto Visitor Center's theme is truly "a place where wildlife and history meet." A high level of environmental education and interpretation exists as this refuge reaches its potential as a demonstration site for applied wildlife management practices. A strong stewardship ethic is demonstrated by the reversion of over 2,500 acres of former cropland to more natural and diversified habitat.

The refuge serves as an outstanding example by providing a variety of habitats for healthy and diverse populations of wildlife, while at the same time trying to minimize the effects of habitat fragmentation. Along with being an important migratory bird stop-over (neotropical songbirds as well as waterfowl), DeSoto remains a popular people place where wildlife can be readily seen and enjoyed. Compatible wildlife-dependent recreation is encouraged by a supportive professional staff. All facilities are maintained at Service standards. Funding is adequate to support a unified and diverse staff of well-trained, committed employees, according to the staffing plan.

DeSoto Refuge makes a significant contribution to the "string of pearls" concept. This concept envisions numerous sites along the Missouri River reach below Sioux City, Iowa, that are dedicated to restoration and preservation of natural floodplain ecosystems. Bottomland forests are being restored along the river. Seasonal flooding naturally regenerates cottonwood stands. Native grasslands have been re-established. Restored wetlands once more attract a significant migration of ducks along the river corridor. Snow goose populations have been reduced to sustainable levels throughout their flyways. Large numbers of refuge visitors utilize excellent facilities to enjoy the out-of-doors and to become more knowledgeable about their environment.

Purpose of and Need for the Plan

This Comprehensive Conservation Plan (CCP) identifies the role DeSoto NWR will play in supporting the mission of the National Wildlife Refuge System and provides primary management guidance for the refuge. The plan articulates management goals for the next 15 years and defines objectives and strategies that will achieve those goals. Several legislative mandates within the National Wildlife Refuge System Improvement Act of 1997 have guided the development of this plan. These mandates include:

- , Wildlife has first priority in the management of refuges.
- , Wildlife-dependent recreation activities of hunting, fishing, wildlife observation, wildlife photography, environmental education and interpretation are the acceptable public uses of



the Refuge System. These uses, commonly referred to as the “Big Six,” will be accommodated when they do not interfere with the refuge’s purposes or the mission of the Refuge System.

- , Other uses of the refuge will only be allowed when they are determined to be appropriate and compatible with the refuge purposes and mission of the Refuge System.

Following the recommendations in the CCP will enhance management of DeSoto National Wildlife Refuge by:

- Providing a clear statement of direction for future management of the refuge.
- Giving refuge neighbors, visitors, and the general public an understanding of the Service's management actions on and around the refuge.
- Ensuring that the refuge's management actions and programs are consistent with the mandates of the National Wildlife Refuge System.
- Ensuring that refuge management is consistent with federal, state and county plans.
- Establishing long-term refuge management continuity.
- Providing a basis for the development of budget requests for refuge operations, maintenance, and capital improvement needs.

The U.S. Fish and Wildlife Service

"Working with others to conserve, protect, and enhance fish and wildlife and their habitats for the continuing benefit of the American people." – Mission of the U.S. Fish and Wildlife Service

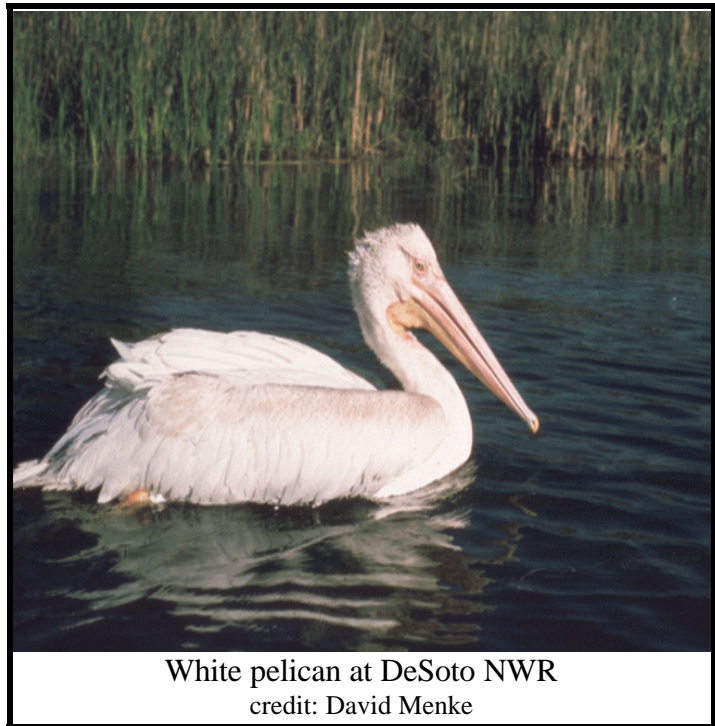
The U.S. Fish and Wildlife Service is the primary federal agency responsible for conserving, protecting, and enhancing fish and wildlife and their habitats for the continuing benefit of the American people. Specific responsibilities include enforcing federal wildlife laws, managing migratory bird populations, restoring nationally significant fisheries, administering the Endangered Species Act, and restoring wildlife habitat such as wetlands. A significant portion of the Service’s mission is accomplished within the National Wildlife Refuge System.

The National Wildlife Refuge System

"To administer a national network of lands and waters for the conservation, management and, where appropriate, restoration of the fish, wildlife and plant resources and their habitats within the United States for the benefit of present and future generations of Americans." – Mission of the National Wildlife Refuge System



Managing the National Wildlife Refuge System has evolved into a significant role for the Service. Founded in 1903 by President Theodore Roosevelt with the designation of Florida's Pelican Island as a refuge for herons and egrets, the National Wildlife Refuge System is the world's largest collection of lands specifically managed for fish and wildlife. The System is a network of more than 500 national wildlife refuges encompassing more than 93 million acres of public land and water. The majority of these lands — 82 percent — is in Alaska, with approximately 16 million acres in the lower 48 states and several island territories. Refuges provide habitat for more than 5,000 species of birds, mammals, reptiles, amphibians, fish, and insects.



White pelican at DeSoto NWR
credit: David Menke

Like Pelican Island, many early national wildlife refuges were created for herons, egrets and other water birds. Others were set aside for large mammals such as elk and bison. Most refuges, however, have been created to protect migratory waterfowl. This is a result of the United States' responsibilities under international treaties for migratory bird conservation as well as other legislation, such as the Migratory Bird Conservation Act of 1929. A map of the National Wildlife Refuge System shows refuges dotting the four major flyways that waterfowl follow from their northern nesting grounds to southern wintering areas.

National Wildlife Refuges also play a vital role in preserving endangered and threatened species. Among the refuges that are well known for providing habitat for endangered species are Aransas NWR in Texas, the winter home of the whooping crane; the Florida Panther Refuge, which protects one of the nation's most endangered mammals; and the Hawaiian Islands Refuge, home of the Laysan duck, Hawaiian monk seal, and many other unique species.

Refuges also provide educational and recreational opportunities for people. When it is compatible with wildlife and habitat needs, refuges can be used for wildlife-dependent activities such as hunting, fishing, wildlife observation, photography, environmental education and interpretation. Many refuges have visitor centers, nature trails, automobile tours, and environmental education programs. Nationwide, more than 35 million people visited national wildlife refuges in 1999.



The National Wildlife Refuge System Improvement Act of 1997 established many mandates aimed at making the management of national wildlife refuges more cohesive. The preparation of Comprehensive Conservation Plans is one of those mandates. The legislation requires the Secretary of the Interior to ensure that the mission of the National Wildlife Refuge System and purposes of the individual refuges are carried out. It also requires the Secretary to maintain the biological integrity, diversity, and environmental health of the refuge system.



Steamboat *Bertrand* model in DeSoto Visitor Center
credit: Michael Whye

Existing Partnerships

The mission statement of the Fish and Wildlife Service stresses “...working with others....” Partnerships with other federal agencies as well as tribal, state, and city governments and schools are important elements in refuge management. Other agencies can provide invaluable assistance in research and maintenance. Partnerships with private groups and non-profit organizations greatly enhance public investment in the refuge, building enthusiasm for its mission and support in funding issues.

In addition to the partnerships that the U.S. Fish and Wildlife Service holds on a national level, DeSoto NWR maintains informal partnerships with the Iowa office of the Natural Resources Conservation Service, Midwest Regional Office of the National Park Service, the Iowa Department of Natural Resources, Nebraska Department of Game and Parks, Harrison County Conservation Board and other County Conservation Boards, Iowa State University Extension, Papio-Missouri River NRD, Midwest Interpretive Association, Ducks Unlimited, Pheasants



Forever, Omaha Chapter of the National Audubon Society, local chapters of the Boy Scouts of America and Girl Scouts of America, certain African-American churches in Omaha, the Omaha and Winnebago Indian Tribes, and 4-H Clubs.



DeSoto volunteer Jack Brownrigg and Treyner (IA) School students
credit: Bruce E. Weber

Legal and Policy Guidance

In addition to the legislation establishing the refuge and the National Wildlife Refuge System Improvement Act of 1997, other federal laws, executive orders, and regulations govern the administration of DeSoto National Wildlife Refuge. See Appendix F for a list of the guiding laws and orders.